

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001236**Date Inspected:** 21-Nov-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Fu Yu Hong**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Mock-up**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Item Description	WBS	Dwg No.	Status
1 Visual Weld inspection to the Bottom plate# PL-42 , BP12			
The QA inspector performed visual weld inspection to the bottom plate PL-42 panel BP-12. The QA inspector assisted Caltrans QA inspector Mr. Larry Viars on the visual weld inspection measuring the effective throat and fillet weld size at the junction of the the WT stiffeners to the bottom plate. The QA inspector found that welds appeared to be compliance with the contract documents.			
2 ZPMC's MT verifications on the OBG Bottom plate PL-42, Panel D6, Segment 3BE			
The QA inspector witnessed ZPMC magnetic particle testing(MT)at the junction of the WT stiffeners with the bottom plate PL-42, BP-12 fillet welds. ZPMC performed approximately 10 % of MT of the weld length. The QA inspector observed that ZPMC verification appeared to be in compliance with the contract documents. However, the QA inspector observed that the dry powder was not applied lightly and in a uniform manner. The QA inspector brought to the attention of MT technician Mr. Zhou Dong Yun at the end of his verifications and asked Caltrans QA inspector Mr. Larry Viars to test areas in question. See the QA inspector Larry Viars report for this date.			
3 A-67 and A 65 Interior spllices welding			
ZPMC, welders Chang Chuan Cang and Bo Wen Ming were observed by the QA inspector performing welding operations on the internal splice panel A67 and A65 (longitudinal stiffener to skin plate). Mr.Chang Chuan Cang was observed welding the weld joint 2B filler passes following the approved welding procedure specification			

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## WELDING INSPECTION REPORT

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WPS-B-T-2332-TC-U5-F. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding (FCAW) process in the flat (1G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA inspector performed random verifications. The QA inspector found that welding parameters appeared to be in general compliance with the contract documents.

Mr. Bo Wen Ming was observed welding the weld joint 2-B filler passes following the approved welding procedure specification WPS-B-T-2332-TC-U5-F. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding (FCAW) process in the flat (1G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA inspector performed random verifications. The QA inspector found that welding appeared to be in general compliance with the contract documents.

4 114 Meters Skin B Heat straightening operations

The QA inspector observed that ZPMC was performing heat straightening operations at the skin B from the tower Mock-up 114 Meters elevation. The QA inspector performed random verifications of the ZPMC heat straightening operations and appeared to be in general compliance with the contract documents.

5 Ultrasonic testing in W Shapes splices OBG.

The QA inspector performed ultrasonic testing (UT) to three W shapes W21x57 designated as RS7D and RS3D for bottom plate BP5, PL34 and RS3B for bottom plate BP6, PL37B, after ZPMC completed their verifications. The QA inspector found that the weld reinforcement exceeded 3 mm in some locations and that the reflection from the weld reinforcement had a class A rejectable indications. The QA inspector had a conversation with ABF representative Kevin Carpenter. The QA inspector relayed that ZPMC required to grind the weld reinforcement that exceeded 3 mm, in addition, the QA inspector was finding class A rejectable indications that could mask relevant indications on the weld metal. Mr. Kevin Carpenter agreed a said that he was going to have a meeting to ZPMC to clarify these issues. He added that all the UT that ZPMC did on that day was going to be redone.

### Summary of Conversations:

As noted above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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